

Injury control in South America

# Injury control in South America: the art and science of disentanglement

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Injury control in a vast number of the American people remains in the 20th century while the injury pandemic shows a 21st century face

While musing upon the request to write an indigenous pediatrician's perspective of the state of play of injury control in South America, particularly as to why matters remain at a rather primitive level and what could be done to move things along, I was struck by this news item: a newspaper in my hometown in southern Brazil reported that a unidentified motorcyclist had fired two gunshots at a brand new mobile speed camera. This camera had replaced a similar one that had been destroyed a month before by two enraged characters armed with iron bars.<sup>w1 w2</sup> This seemingly simple account actually offers insights into a variety of issues: undue weapon carrying, speeding vehicles, novel traffic calming strategies, newish high tech devices, meager safety knowledge discrimination, sheer public unawareness, violence at-large, and—of course—a middle income developing country with mostly inconsistent and inequitable public health priorities. Does this sound too entangled for the ordinary reader's liking? Well, bienvenido a Sudamérica!

## THE USUAL GRIM FIGURES, WITH SOME NASTY PARTICULARS

The injury problem in South America, as worrisome as in the rest of the world, bears some specific circumstances that are worthy of attention. First, up to 29 years, injuries account for nearly six million disability adjusted years of life lost each year—around 17% of the burden of disease.<sup>1</sup> This means we face a graver public health problem than most.

Second, although the region is by and large free from wars, interpersonal violence has been a frighteningly growing cause of death and disablement from the age of 5 through adolescence.<sup>1-3</sup> Figure 1 shows death rates associated with the main causes of injury in selected countries. While homicide rates may be quite similar to those of high income nations in exceptional cases like

Argentina and Chile, most figures are disturbing, particularly those from Brazil and Colombia, which are three to six times greater than those from the most violent of the developed countries.<sup>2 4</sup>

A third circumstance that stands out is the absolute predominance of male victims: even if we disregard homicides, females are consistently three to four times less likely to die from injury than males. This is a significantly larger gender gap than usual. If we focus on homicides, the disparity is even more stark; for instance, the odds of Colombian or Brazilian males rather than females being killed are over 10 to one!<sup>2</sup> Though most other countries are much less violent, the broad predominance of male victims is quite noticeable in all age ranges and types of injury, particularly drowning and self inflicted injuries.

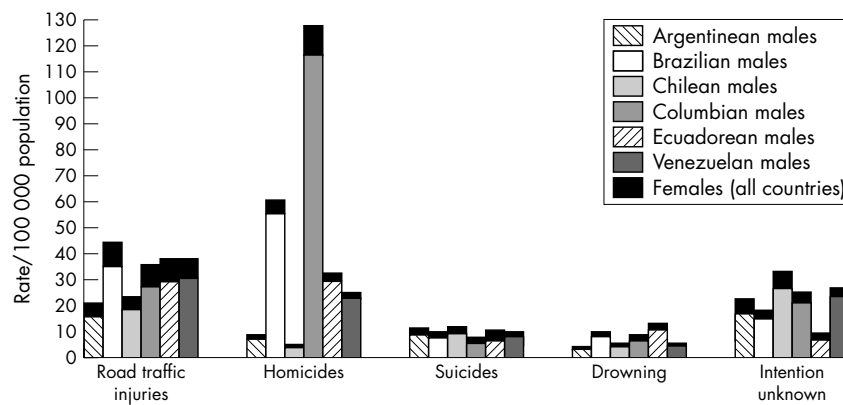
Road traffic injuries are somewhat peculiar in South America, with both distinctive features and many shared with either developed or primitive societies. As in high income countries, traffic crashes are a leading cause of death among children 0–4 years—which is not usually the case in less developed regions—and remains the number one killer in school age children and teenagers.<sup>1</sup> On the other hand, as in most poor countries, South American traffic is marked by quite diverse road usage, including the predominance of pedestrians and the presence—sometimes massive—of motorcycles, bicycles, and animal drawn vehicles.<sup>5</sup> Whereas established economy regions have experienced a steady downward trend in traffic related death rates, over the past few decades, South America has generally followed the rest of the world's divergent upward trend. In spite of that, many municipalities managed to stabilize the number of deaths on the roads through strict enforcement of safety laws, usually with a narrow focus on issues like seat belts, speed control, or cell phone bans.<sup>6</sup>

Finally, fig 1 shows the inordinate rate of injuries with unknown intent, ranging from 15% to 30% (compared with developed countries' rates of about 2%), undoubtedly because the gathering of data in too many South American settings is incomplete, often based on extrapolations, or simply unreliable. Given that data concerning non-mortal injuries are even less reliable, it is clear that future injury control measures must call for the serious commitment of professionals and governments to improving research and official statistics from which to derive priorities.

## A FEW REFLECTIONS ON THE ALLEGED CAUSES

It has often been said that people in poor countries are at greater risk for injury because of the defective adaptation to modern technologies and products without the attention to safety standards and attitudes. In fact, it is logical to relate injury risk to overcrowded and vulnerable dwellings, pedestrians on insecure roads, faulty means of transport, small arms proliferation, and workplaces not adhering to safety standards. Such reasoning leads to the empirical assumption of manifold deterrents to injury control in all of South America: prevailing functional illiteracy and less than effective media that hinder awareness; weak community organization and communication between sectors of activity; low priority support from governments or lack of regulatory authority; fragmentary ongoing social and political processes; scanty financial resources; scarcity of competent technical advisors; and more environmental and product hazards. Moreover, in most countries many social determinants, like unemployment and lack of support for agriculture, promote the clustering of millions of inhabitants in huge and distorted cities, with all their inherent inadequacies.

Nevertheless, many have cautioned against unsound generalizations about the influence of geographic and cultural transitions, as well as socioeconomic differences, on injury risks.<sup>7-9</sup> Several studies have cast doubt on the contribution of poverty alone to injury rates, suggesting that sharing of space and proximity to relatives could be regarded as positive values, that household crowding could provide more opportunities for supervision, that children from affluent families may be at increased risk of recreational injury, and that children of single parents might not face a greater risk for injury.<sup>10-14</sup> There is also the ongoing issue of the allegedly detrimental effect of the use of the word "accident" to injury control efforts, particularly within the realm of Latin



**Figure 1** Age standardized injury related mortality rates for selected South American countries (per 100 000 population, years 1997–99) Source: Pan American Health Organization/Special Program for Health Analysis, Technical Information System (available at: [www.paho.org/english/ad/dpc/nc/lesion.htm](http://www.paho.org/english/ad/dpc/nc/lesion.htm)).

languages, in which the term “injuria” bears a strong connotation of moral offense. In spite of the prevailing belief that the use of the word accident is at least part of the reason people (and especially governments) do not view injuries as they do diseases,<sup>15</sup> context specific research is still needed to clarify the practical implications; and the same applies to the complex etiology of injuries.

It is wise to bear in mind that none of the South American countries has yet accomplished the difficult epidemiologic transition from the stage of rising trends of injury proportional mortality to that in which injury control starts to succeed.<sup>16–17</sup> To do so—and to grasp the causes of South America’s injury problem—will take much international cooperation involving true exchange, not only transfer, of research knowledge and experiences, successful or not.

### ACADEMIA IN LOW GEAR...

What are South American researchers doing about this huge public health problem? Since this journal is among the top international journals with an exclusive general injury prevention focus, a hard look at its contents should surely point to the answer. From its launch, *Injury Prevention* has published only three original articles from South America: Delgado *et al* showed that crowding, poverty, and poor maternal education were major risk factors for burns in Peruvian children.<sup>w3</sup> Liberatti *et al* presented a before-and-after study of the inception of the new Brazilian traffic code, and concluded that it had been effective in increasing the use of safety equipment and decreasing the number of young drivers under the influence of alcohol.<sup>w4</sup> Fonseca *et al*, also from Brazil, showed that diaries could provide better information than retrospective methods in assessing

injuries among preschool children.<sup>w5</sup> In a letter, I noted that the new Brazilian traffic code was one of the few available laws requiring children under 10 to travel in the back seat and to use a safety device.<sup>w6</sup> Apart from that, there were only seven cursory citations of Brazil, five of Colombia, four of Chile, three of Argentina, and one of Peru, either in articles or in general sections.<sup>w7–w20</sup> “Splinters & fragments” commented on one Colombian study that described a standardized road injury reporting system; one more study on the effectiveness of the new Brazilian traffic code; and another Brazilian study that documented that three quarters of injured children were not alone.<sup>w15 w16</sup> The sole South American entry in 10 years of “News and notes” referred to the Argentinean non-profit organization “Luchemos por la Vida”, which promotes traffic safety awareness.<sup>w17</sup> Uruguay was remotely alluded to in an editorial citation of Uruguayan journalist Eduardo Galeano’s account on how his continent’s transportation infrastructure had been developed to drain its wealth out to the colonial economy.<sup>w21</sup> None of the remaining countries—Bolivia, Ecuador, French Guiana, Guyana, Paraguay, Suriname, and Venezuela—was ever directly cited.

The lack of citation could be due to the difficulty of Spanish and Portuguese speaking authors to publish in English. However, a search through the main South American medical databases, LILACS<sup>w22</sup> and SciELO,<sup>w23</sup> using the terms “injury”, “accident” and “child”, over the past two years, yielded only 13 articles from Brazil,<sup>w24–w36</sup> 10 from Argentina,<sup>w37–w46</sup> and one from Chile.<sup>w47</sup> All papers were descriptive studies, reviews, editorials, and case reports; I did not find any intervention evaluation. The intriguing absence of articles from Colombia, home of the Andean Net of

Violence Prevention, prompted me to perform a manual search in the official journal of the Colombian Pediatric Society; it did not retrieve any paper on injuries. The leading role of Brazil and Argentina is probably due to the continuous awareness raising actions of pediatric societies, as well as to the recent surge of development of postgraduate courses, which have been strongly promoting scientific publishing. Knowledge exchange brought about by the Group of Editors of Pediatric Journals of the South Cone<sup>w48</sup>—one of whose most fruitful achievements is the yearly publication of selected original articles from Argentina, Brazil, Chile, Uruguay, Paraguay, and Bolivia—also merits remark.

A perusal of the abstract book of the Vienna World Conference revealed that 3.8% of the 1538 scientific presentations were from South America; mostly mortality trend analyses, descriptive epidemiology, safety knowledge evaluation, communication strategies, description of programs, appraisal of legislation, and public health policies. Again, there were only seven intervention studies.<sup>w49–w55</sup> This is too small a contribution, even if we take into account that fewer than 10% overall of these conferences’ papers show evaluations.<sup>18</sup> Thirty two presentations came from Brazil; Colombia had 24 presentations; and Chile and Uruguay appeared with one each. I do not have an explanation for the absence of Argentina. At any rate, it is imperative that these materials be published in media that are more accessible to broader audiences.

My overall conclusion is that injury research in South America is quite deficient, given the enormous toll of the injury problem.<sup>19</sup> Indeed, to turn injury control into a lasting research priority, we simply must evolve to a further socioeconomic stage, which allows training of enough professionals and proper provision of funds. Until then, help from developed countries is indispensable. Also, journal editors could be further persuaded to publish reports with less than ideal methodological soundness in the name of fostering research in developing regions. As has already been stated in this journal, learning in public health is best promoted by the critical sharing of evidence, instead of censoring evidence that is less than perfect.<sup>20</sup>

### THINGS ARE LOOKING UP (SORT OF)

The past two decades saw the flourishing of a number of non-governmental organizations devoted to different enterprises in safety promotion, mainly traffic injury prevention and violence reduction. These have played a major

part in stimulating public awareness, gathering impartial information, influencing implementation of policies, lobbying for the passage of effective laws, and—above all—bringing about creative innovations. For instance, the organization Vida Urgente chauffeurs teenagers from late night parties, rendering high risk driving a minor concern.<sup>w56</sup> Figure 2 shows an example of such productive Third Sector organizations. The websites of some of the most relevant of the Third Sector organizations, which all readers are encouraged to visit, can be found at *Injury Prevention* online.<sup>w56–w70</sup> The bad news is that however effective these organizations may be in their particular fields, they lack communication and interdisciplinary work, which would greatly enhance their actions. Since South American media—some of whose campaigns have special merits—do a good job overall in promoting public awareness and education, communication professionals could certainly be stimulated to help more in fostering the interplay between non-governmental organizations.

Government actions are mixed: most countries perceive injuries as a significant public health problem, but only half of them have a national injury prevention strategy or a consultative group.<sup>21</sup> In part, this is due to the prevailing political instability and competing interests, although all South American countries have got rid of autocratic regimes whose actions were not always to the people's advantage. At any rate, there are some good examples to note, such as the Argentine Pediatric Trauma Program,<sup>22</sup> the Brazilian National Policy of Reduction of Injury Morbidity and Mortality,<sup>23</sup> and the new Colombian TransMilenio mass transport system.<sup>24</sup> A more recent instance of

public enthusiasm for a government cause is the massive support given to the new Brazilian Disarmament Statute, which restricts and regulates the use of weapons. In the first couple of weeks after the law came into force by a presidential decree, over 20 000 guns were turned in to the authorities.

To sum up, in spite of financial constraints and competing priorities, the concern of societies and governments about injuries has grown steadily in South America and has brought about positive initiatives. Unfortunately, the market sector is reluctant to get involved, necessitating dependence on developed nations for the foreseeable future.

### STEPPING INTO THE 21ST CENTURY

In summary, it will take a great deal of science and much art to disentangle the intricacies of all sociocultural determinants and control measures of injury in South America. However, the question remains: what exactly can (must?) be done to move things along? In addition to the various suggestions above (improving research and official statistics, context specific and action driven research, international cooperation in exchanging research knowledge and experiences, more accessible publications, more inclusive publishing policies, training more professionals, strict enforcement of focused safety laws, involving the market sector), I urge the following pragmatic considerations: First, it is imperative that we set first order priorities and countermeasures locally and immediately. Second, we must take teamwork seriously and strive for true interdisciplinary action. Third, we should favor the so-called bottom-up approach, in which communities assume greater responsibility for both collective and individual safety. It is necessary to adapt the original safe community concept to our reality, acting at the neighborhood level, so as to turn many large unsafe cities into a myriad of safe communities. Fourth, we should devise strategies using a systems approach, in which the environment helps people to cope with day-to-day threats so that their behavior does not lead to injury.

Lastly, although this editorial was commissioned with the suggestion that I didn't dwell on the issue of low income, it is difficult not to consider that in order to slash the injury related burden to levels that approximate those of developed countries it is essential that the whole of South America evolve to a higher and more equitable socioeconomic stage. Therefore, even if this is beyond the direct control of the injury

community, everyone must play their part in a collective effort to foster democratic institutions, along with all the other actions mentioned, lest we remain trapped in the 20th century, while the injury pandemic shows a sinister 21st century face.

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Extra references (w) appear on <http://www.injuryprevention.com/supplemental>

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**Figure 2** Monica and friends promote the Brazilian Traffic Code, which mandates children under 10 to ride in rear seat and with an age appropriate safety device. These characters—the South American counterparts of Charlie Brown & Co—deserve recognition for their long standing traffic safety promotion work, which is the epitome of the Third Sector injury control activities (published with permission; copyright 1996 Mauricio de Sousa Produções).



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## Advocacy

# Evidence based advocacy

**E Friedlaender, F Winston**

## The academic clinician scientist's important role in translating research into action

**E**vidence based advocacy integrates the otherwise independent but overlapping efforts of clinicians, academics, epidemiologists, public health officials, and policymakers to apply scientific principles to widespread health promotion and prevention initiatives. We argue here that advocacy efforts lie within academic medical responsibilities, in part because health care academics lend credibility, as well as inspiration and imagination to these worthwhile pursuits, but more so because it concludes a professional obligation to those in our care by translating research into action. Just as rigorous science builds the evidence base for change, rigorous efforts and their evaluation are necessary to ensure that this evidence will be translated into change.

### SUCCESSFUL MODELS OF ADVOCACY

Perhaps the most striking historical example of the impact of individual academic clinician scientists on advocacy efforts has been in the containment and control of poliomyelitis. International public sector and private sector partnerships among government agencies and local health care providers ensure routine immunizations, offer supplementary immunizations, and implement careful surveillance of the occurrence of acute flaccid paralysis. Recent efforts have reduced the burden of polio globally by greater than 99% since 1988.<sup>1</sup> Academic clinician scientists, Dr Jonas Salk at the University of Pittsburgh and Dr Albert Sabin at Cincinnati Children's Hospital, pioneered broad polio immunization efforts in the 1960s.

Health care providers have also been instrumental in shaping and implementing advocacy efforts related to smoking cessation. Dr Luther L Terry, Surgeon General of the United States Public Health Service, released a landmark report from the Surgeon General's Advisory Committee on Smoking and Health on 11 January 1964, providing the initial scientific evidence linking smoking to cancer and other serious diseases.<sup>2</sup> More recently, the Joint Committee on Smoking and Health issued a Special Report outlining global physician responsibility in the control of smoking related illness: clinicians ought to ensure that counseling and pharmacological management for nicotine addiction are readily available to all patients.<sup>3</sup> Since 1965, the rate of adult current smokers has dropped from 41.9% to 23.2% in 2000.<sup>4</sup> Advocacy driven by healthcare professionals can have a profound impact on healthy behaviors.

Individual successes based on the efforts of healthcare professionals within the field of injury prevention deserve similar accolades, but fall far short of addressing the burden of injury. Child passenger safety advocacy, initially spearheaded by a pediatrician and academic/clinician from Tennessee, Robert Sanders, has had a tremendous impact on protecting children in crashes. Since Sanders began his advocacy to get children into appropriate child safety seats and booster seats, all 50 states and the District of Columbia have enacted laws requiring child restraints for very young children. Through additional research from others, American Academy of Pediatrics policy statements and national

and community based advocacy programs, academic clinicians have furthered the field of child passenger safety considerably. Since 2000, 28 states and the District of Columbia have upgraded their child restraint laws to protect older children with booster seat requirements and two federal laws have also been enacted to improve safety standards for children in motor vehicles. Policymakers relied on published data and testimony provided by academic clinicians. Partners for Child Passenger Safety, funded by State Farm® at The Children's Hospital of Philadelphia began reporting national restraint use trends for children in 1999. Since then, child restraint use has increased from 49% to 65% in 2003.<sup>5</sup> The significant increase in child restraint use in recent years has had a direct effect on motor vehicle traffic fatality statistics, which were at historic low levels for children under age 8 in 2002.<sup>6</sup> Advocacy has stimulated tremendous increases in polio immunizations, smoking cessation, and child passenger safety. Still, objective inquiry into these fields of study must continue in order to create evidence bases available for review and translation into policies for the public good.

Further, insufficient attention has been paid to suicide, intentional injury deaths, drownings, suffocation, burns and smoke inhalation, and pedestrian injuries. Investigation into these growing public health epidemics has been on-going; however, most injury prevention research has yet to be applied to control measures.

With increasing demands on academic physicians, both clinically and academically, public health advocacy for many has become another burden rather than a responsibility. For others, failure to translate research into practice stems, in part, from hesitation by investigators, dedicated to research, to actively engage in advocacy. The common misperception that advocacy lacks scientific rigor or is not a scholarly pursuit has distanced many scientists from pursuing such activity as a core professional role. In fact, advocacy, defined as the translation of research into action, requires application of principles central to the disciplines of